

Claims:

1. A tube support device for a tube bundle having tubes arranged in rows with
5 tube lanes separating the tube rows, comprising a longitudinally extensive strip
having a plurality of successive transverse rows located at successive
longitudinal locations along the strip, each row having a plurality of raised,
tube-engaging zones on each face of the strip, extending laterally outwards
10 from both faces of the strip to engage with tubes in the tube bundle on opposite
sides of a tube lane.
2. A tube support device according to claim 1 in which the tube-engaging zones in
each transverse row alternately extend outwardly from one face of the strip and
the other.
- 15 3. A tube support device according to claim 1 in which the tube engaging zones at
corresponding transverse locations in adjacent transverse rows extend
outwards from opposite faces of the strip.
- 20 4. A tube support device according to claim 3 in which each transverse row
includes an odd number of raised, tube-engaging zones, with the raised, tube-
engaging zones in each row extending successively from opposite faces of the
strip.
- 25 5. A tube support device according to claim 1 in which the raised, tube-engaging
zones comprise raised dimples which extend outwards from their respective
face of the strip.
- 30 6. A tube support device according to claim 1 in which the raised, tube-engaging
zones comprise longitudinally extensive corrugations which extend outwards
from their respective face of the strip.
- 35 7. A tube support device according to claim 1 in which the transverse rows at one
end of the strip comprise raised dimples and at the other end, longitudinally
extensive corrugations.

8. A tube support device according to claim 7 which has a plurality of transverse rows of raised dimples and a plurality of longitudinally extensive corrugations and a row of raised dimples next to a row of raised corrugations is merged into the row of raised corrugations, each dimple merging into the end of a corrugation in the same longitudinal line along the lengthwise axis of the strip.
9. A tube support device according to claim 7 in which the total depth of the raised dimples from one side of the strip to the other is greater than the total depth of the corrugations from one side of the strip to the other.
10. A tube bundle device comprising tubes arranged in rows with tube lanes separating the tube rows, the tubes being supported by tube support devices located in tube lanes, each tube support device comprising a longitudinally extensive strip having a plurality of successive transverse rows located at successive longitudinal locations along the strip, of a plurality of raised, tube-engaging zones on each face of the strip extending laterally outwards from both faces of the strip to engage with tubes on opposite sides of the tube lane in the tube bundle.
11. A tube bundle device according to claim 10 in which the tube-engaging zones in each transverse row of the tube support devices alternately extend outwardly from one face of the strip and the other.
12. A tube bundle device according to claim 10 in which the tube engaging zones at corresponding transverse locations in adjacent transverse rows of the tube support devices extend outwards from opposite faces of the strip.
13. A tube bundle device according to claim 10 in which the raised, tube-engaging zones of the tube support devices comprise raised dimples or longitudinally extensive corrugations which extend outwards from their respective face of the strip.
14. A tube bundle device according to claim 10 in which the tube engaging zones at the outer ends of the tube support devices at the periphery of the tube

bundles comprise raised dimples and the tube-engaging zones away from the periphery of the tube bundle comprising longitudinally extensive corrugations.

5 15. A tube bundle device according to claim 14 in which the total depth of the raised dimples from one side of the strip to the other is greater than the total depth of the corrugations from one side of the strip to the other.

10 16. A tube bundle device according to claim 10 in which the tubes in the tube bundle are arranged in rectangular formation with orthogonal rows of tubes and tube lanes, and in which the tubes are supported by tube support devices located in tube lanes, each tube support device comprising a longitudinally extensive strip having a plurality of pairs of successive transverse rows of raised tube-engaging zones, the pairs of rows being located at successive longitudinal locations along the strip, each transverse row having a plurality of
15 raised, tube-engaging zones on each face of the strip extending laterally outwards from both faces of the strip to engage with a pair of adjacent tubes on opposite sides of the tube lane with each pair of adjacent transverse rows of raised, tube-engaging zones engaging with a pair of adjacent tubes on opposite sides of the tube lane.

20 17. A tube bundle device according to claim 10 in which the tubes in the tube bundle are arranged in rectangular formation with orthogonal rows of tubes and tube lanes, and in which the tubes are supported by tube support devices located in tube lanes, each tube support device comprising a longitudinally extensive strip having a plurality of successive transverse rows of raised
25 longitudinally-extensive corrugated tube-engaging zones, the rows being located at successive longitudinal locations along the strip, each transverse row having a plurality of the raised, longitudinally-extensive corrugated tube-engaging zones on each face of the strip extending laterally outwards from both faces of the strip to engage with a pair of adjacent tubes on opposite sides
30 of the tube lane.

35 18. A tube bundle device according to claim 10 in which the tubes in the tube bundle are arranged in rectangular formation with orthogonal rows of tubes and tube lanes, and in which the tubes are supported by tube support devices

located in tube lanes, each tube support device comprising a longitudinally extensive strip having a plurality of successive transverse rows of raised longitudinally-extensive corrugated tube-engaging zones, the rows being located at successive longitudinal locations along the strip, each transverse row having a plurality of the raised, longitudinally-extensive corrugated tube-engaging zones on each face of the strip extending laterally outwards from both faces of the strip to engage with a pair of adjacent tubes on opposite sides of the tube lane, with each pair of transverse, adjacent rows of tube-engaging zones engaging with a pair of adjacent tubes on opposite sides of the tube lane.

19. A tube bundle device according to claim 10 in which the tubes in the tube bundle are arranged in rectangular formation with orthogonal rows of tubes and tube lanes and in which the tubes are supported by tube support devices located in tube lanes, each tube support device comprising a longitudinally extensive strip having a plurality of successive transverse rows of raised dimples at the outer ends of the tube support devices at the periphery of the tube bundles and longitudinally-extensive corrugated tube-engaging zones away from the periphery of the tube bundle, the rows being located at successive longitudinal locations along the strip, each successive pair of transverse rows of dimples engaging with a pair of adjacent tubes on opposite sides of the tube lane in which the support device is located and each successive transverse row of longitudinal corrugations engaging with a pair of adjacent tubes on opposite sides of the tube lane.

20. A tube bundle device according to claim 10 in which the tubes in the tube bundle are arranged in triangular formation with rows of tubes in staggered, alternating-row arrangement and tube lanes between the tube rows, in which the tubes are supported by tube support devices located in the tube lanes, each tube support device comprising a longitudinally extensive strip having a plurality of successive transverse rows of raised tube-engaging zones, the transverse rows being located at successive longitudinal locations along the strip, each transverse row having a plurality of raised, tube-engaging zones on each face of the strip extending laterally outwards from both faces of the strip

to engage with a pair of adjacent tubes in adjacent tube rows on opposite sides of the tube lane.